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(c) pivoting manually a wrist-pivoting element of the control assembly to cause the wrist member to pivot correspondingly about the distal forearm end and along the first axis of step (a); and

(d) moving manually an end effector-controlling element of the control assembly to cause the end effector member to move about the second axis of step (a) and perform a surgical procedure at the internal surgical site within the anatomy of the person.

47. The method of Claim 46 additionally comprising axially moving manually a forearm control element of the control assembly to cause the forearm member to axially move correspondingly along a longitudinal forearm axis of the forearm member.

48. The method of Claim 46 additionally comprising rotatably moving manually a forearm control element of the control assembly to cause the forearm member to rotatably move correspondingly about a longitudinal forearm axis of the forearm member.

49. The method of Claim 46 additionally comprising pivoting manually a forearm control element of the control assembly to cause the forearm member to pivot correspondingly about a point along a longitudinal forearm axis of the forearm member.

50. The method of Claim 46 additionally comprising inserting, prior to said moving step (d), an endoscope into the anatomy of the person such that said endoscope is oriented toward the end effector member; and displaying an image of the end effector member for viewing by an eye of an operator.

51. The method of Claim 47 additionally comprising inserting, prior to said moving step (d), an endoscope into the anatomy of the person such that said endoscope is oriented toward the end effector member; and displaying an image of the end effector member for viewing by an eye of an operator.

52. The method of Claim 48 additionally comprising inserting, prior to said moving step (d), an endoscope into the anatomy of the person such that said endoscope is oriented toward

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the end effector member; and displaying an image of the end effector member for viewing by an eye of an operator.

53. The method of Claim 49 additionally comprising inserting, prior to said moving step (d), an endoscope into the anatomy of the person such that said endoscope is oriented toward the end effector member; and displaying an image of the end effector member for viewing by an eye of an operator.

54. The method of Claim 50 wherein said control assembly comprises a computer and a control coordinate system; and said internal surgical site includes a surgical coordinate system.

55. The method of Claim 51 wherein said control assembly comprises a computer and a control coordinate system; and said internal surgical site includes a surgical coordinate system.

56. The method of Claim 52 wherein said control assembly comprises a computer and a control coordinate system; and said internal surgical site includes a surgical coordinate system.

57. The method of Claim 53 wherein said control assembly comprises a computer and a control coordinate system; and said internal surgical site includes a surgical coordinate system.

58. The method of Claim 54 additionally comprising remapping with said computer movements of the end effector-controlling element in the surgical coordinate system to movements of the end effector member in the control coordinate system such that the image of the end effector member displayed to the eye of the operator and the end effector-controlling element being manually moved by the operator appear to the operator to define an integral surgical instrument.

59. The method of Claim 55 additionally comprising remapping with said computer movements of the end effector-controlling element in the surgical coordinate system to movements of the end effector member in the control coordinate system such that the image of the end effector member displayed to the eye of the operator and the end effector-controlling

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element being manually moved by the operator appear to the operator to define an integral surgical instrument.

60. The method of Claim 56 additionally comprising remapping with said computer movements of the end effector-controlling element in the surgical coordinate system to movements of the end effector member in the control coordinate system such that the image of the end effector member displayed to the eye of the operator and the end effector-controlling element being manually moved by the operator appear to the operator to define an integral surgical instrument.

61. The method of Claim 57 additionally comprising remapping with said computer movements of the end effector-controlling element in the surgical coordinate system to movements of the end effector member in the control coordinate system such that the image of the end effector member displayed to the eye of the operator and the end effector-controlling element being manually moved by the operator appear to the operator to define an integral surgical instrument.

62. The method of Claim 58 wherein the image of the end effector member appears to the eye of the operator to extend distally from the end effector-controlling element to a virtual end effector position within the control coordinate system and an angle defined between a position of the end effector member and a field of view of the endoscope within the surgical coordinate system remains substantially equal to an angle defined between the eye of the operator and the virtual end effector position within the control coordinate system.

63. The method of Claim 61 wherein the image of the end effector member appears to the eye of the operator to extend distally from the end effector-controlling element to a virtual end effector position within the control coordinate system and an angle defined between a position of the end effector member and a field of view of the endoscope within the surgical coordinate system remains substantially equal to an angle defined between the eye of the operator and the virtual end effector position within the control coordinate system.

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~~member~~ 64. The method of Claim 62 wherein the end effector assembly defines an angular orientation in the surgical coordinate system, and the end effector-controlling element defines an angular orientation in the control coordinate system, and wherein the control assembly maintains the angular orientation of the end effector member relative to the endoscope at a same angular orientation as the angular orientation of the end effector-controlling element relative to the eye of the operator when the operator manually moves the end effector-controlling element.

~~member~~ 65. The method of Claim 63 wherein the end effector assembly defines an angular orientation in the surgical coordinate system, and the end effector-controlling element defines an angular orientation in the control coordinate system, and wherein the control assembly maintains the angular orientation of the end effector member relative to the endoscope at a same angular orientation as the angular orientation of the end effector-controlling element relative to the eye of the operator when the operator manually moves the end effector-controlling element.

66. The method of Claim 54 wherein said displaying comprises magnifying an image of the internal surgical site, and said computer scales movements of the end effector-controlling element by a scaling factor.

67. The method of Claim 58 wherein said displaying comprises magnifying an image of the internal surgical site, and said computer scales movements of the end effector-controlling element by a scaling factor.

68. The method of Claim 64 wherein said displaying comprises magnifying an image of the internal surgical site, and said computer scales movements of the end effector-controlling element by a scaling factor.

69. The method of Claim 50 wherein a field of view of the endoscope is at a first angle relative to vertical, and wherein a field of view of the eye of the operator is at a second angle relative to vertical which is different than the first angle.

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70. The method of Claim 68 wherein a field of view of the endoscope is at a first angle relative to vertical, and wherein a field of view of the eye of the operator is at a second angle relative to vertical which is different than the first angle.

71. The method of Claim 50 additionally comprising maintaining gas insufflation pressure within the internal surgical site.

72. The method of Claim 50 wherein the end effector member comprises a structure selected from the group consisting of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades, and irrigators.

73. The method of Claim 46 wherein said surgical assembly includes a tactile feedback member supported by said end effector member.

74. The method of Claim 70 wherein said surgical assembly includes a tactile feedback member supported by said end effector member.

75. The method of Claim 73 additionally comprising reproducing tactile sensation on hands of an operator at the control assembly.

76. The method of Claim 74 additionally comprising reproducing tactile sensation on hands of the operator at the control assembly.

77. A minimally invasive surgical method comprising the steps of:

(a) providing a surgical instrument comprising a forearm member, a wrist member pivotally connected to the forearm member, and a surgical end effector member movably coupled to the wrist member;

(b) inserting the surgical instrument into an anatomy of a person until the surgical end effector member reaches an internal surgical site within the anatomy of the person;

(c) displaying an image of the surgical end effector at the internal surgical site for viewing by an eye of an operator at a control station; and

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(d) moving manually by the operator a surgical control handle of the control station to cause the surgical end effector to move and perform a surgical procedure at the internal surgical site within the anatomy of the person.

78. The minimally invasive surgical method of Claim 77 wherein said wrist member is pivotally connected to the forearm member *in a manner* such as to be capable of being pivoted about a first axis, and said surgical end effector member is movably coupled to the wrist member *in a manner* such as to be capable of being moved about a second axis as the surgical control handle of the control station is being manually moved by the operator.

79. The minimally invasive surgical method of Claim 78 wherein said second axis is generally perpendicular to the first axis.

80. The minimally invasive surgical method of Claim 77 additionally comprising pivoting manually by the operator a wrist-pivoting handle of the control station to cause the wrist member to pivot on the forearm member.

81. The minimally invasive surgical method of Claim 78 additionally comprising pivoting manually by the operator a wrist-pivoting handle of the control station to cause the wrist member to pivot on the forearm member and about the first axis.

82. The minimally invasive surgical method of Claim 79 additionally comprising pivoting manually by the operator a wrist-pivoting handle of the control station to cause the wrist member to pivot on the forearm member and about the first axis.

83. The minimally invasive surgical method of Claim 77 wherein said control station comprises a computer and a station coordinate system, and said internal surgical site includes a surgical coordinate system.

84. The minimally invasive surgical method of Claim 82 wherein said control station comprises a computer and a station coordinate system, and said internal surgical site includes a surgical coordinate system.

85. The minimally invasive surgical method of Claim 83 additionally comprising remapping with said computer movements of the surgical control handle in the surgical coordinate system to

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movements of the surgical end effector member in the ~~control~~ <sup>station</sup> coordinate systems such that the image of the surgical end effector member displayed to the eye of the operator and the surgical control handle being moved by the operator appear to the operator to define an integral surgical instrument.

86. The minimally invasive surgical method of Claim 84 additionally comprising remapping with said computer movements of the surgical control handle in the surgical coordinate systems to movements of the surgical end effector member in the ~~control~~ <sup>station</sup> coordinate systems such that the image of the surgical end effector member displayed to the eye of the operator and the surgical control handle being moved by the operator appear to the operator to define an integral surgical instrument.

87. The minimally invasive surgical method of Claim 77 additionally comprising axially moving manually by the operator a forearm control handle of the control station to cause the forearm member to axially move correspondingly along a longitudinal forearm axis of the forearm member.

88. The minimally invasive surgical of Claim 77 additionally comprising rotatably moving manually by the operator a forearm control handle of the control station to cause the forearm member to rotatably move correspondingly about a longitudinal forearm axis of the forearm member.

89. The minimally invasive surgical method of Claim 77 additionally comprising pivoting manually by the operator a forearm control handle of the control station to cause the forearm member to pivot correspondingly about a point along a longitudinal forearm axis of the forearm link member.

90. The minimally invasive surgical method of Claim 79 additionally comprising axially moving manually by the operator a forearm control handle of the control station to cause the forearm member to axially move correspondingly along a longitudinal forearm axis of the forearm member.

91. The minimally invasive surgical method of Claim 79 additionally comprising rotatably moving manually by the operator a forearm control handle of the control station to cause the

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forearm member to rotatably move correspondingly about a longitudinal forearm axis of the forearm member.

92. The minimally invasive surgical method of Claim 79 additionally comprising pivoting manually by the operator a forearm control handle of the control station to cause the forearm member to pivot correspondingly about a point along a longitudinal forearm axis of the forearm member.

93. The minimally invasive surgical method of Claim 86 additionally comprising axially moving manually by the operator a forearm control handle of the control station to cause the forearm member to axially move correspondingly along a longitudinal forearm axis of the forearm member.

94. The minimally invasive surgical method of Claim 86 additionally comprising rotatably moving manually by the operator a forearm control handle of the control station to cause the forearm member to rotatably move correspondingly about a longitudinal forearm axis of the forearm member.

95. The minimally invasive surgical method of Claim 86 additionally comprising pivoting manually by the operator a forearm control handle of the control station to cause the forearm member to pivot correspondingly about a point along a longitudinal forearm axis of the forearm member.

96. The minimally invasive surgical method of Claim 77 wherein the surgical end effector member comprises a structure selected from the group consisting of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades, and irrigators.

97. The minimally invasive surgical method of Claim 82 wherein the surgical end effector member comprises a structure selected from the group consisting of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades, and irrigators.

98. The minimally invasive surgical method of Claim 86 wherein the surgical end effector member comprises a structure selected from the group consisting of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades, and irrigators.

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